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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,411	01/26/2004	Bruce Lawence John Murray	20203-30	2215
572	7590	07/26/2007		
CLIFFORD A. POFF 9800B MCKNIGHT ROAD SUITE 115 PITTSBURGH, PA 15237			EXAMINER YOUNG, NICOLE M	
			ART UNIT 2139	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/765,411

Applicant(s)

MURRAY ET AL.

Examiner

Nicole M. Young

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is in response to the application filed January 26, 2004.

Claims 1-7 are pending. The Applicant has claimed foreign priority to application 0118382.1 filed in the United Kingdom on July 26, 2001.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claims 5-7**, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 1 recites the limitation "the material". There is insufficient antecedent basis for this limitation in the claim. **Claims 2-3** are dependent on claim 1 and therefore include the same limitation. The Examiner suggests changing "the material" to state "the light-transmitting material".

Claim 3 recites the limitation "the graded refractive index layer". There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the article". There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the material". There is insufficient antecedent basis for this limitation in the claim. The Examiner suggests changing "the material" to state "the graded refractive index material"

Claim 7 recites the limitation "said material". There is insufficient antecedent basis for this limitation in the claim. The Examiner suggests changing "said material" to state "said photopolymerisable material".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Philips et al. (US 6,674,875)** herein referred to as Philips and further in view of **Orenstein et al. (US 4,645,301)** herein referred to as Orenstein.

Philips teaches as in **claims 1 and 4**, a system for security marking a product, in which a surface of the product is covered by a layer of light-transmitting material which exhibits variations in refractive index throughout the material such that for most angles of view the material acts as a conventional diffuser of light (Philips column 12 lines 1-27 "light diffusing screen incorporating graded refractive index features) and thereby conceals or obscures a marking applied to a surface of the product and covered by said

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layer, or conceals or obscures a marking incorporated in said layer (Philips column 10 lines 1-27, in particular "the code marking is such as to be substantially unnoticeable").

Philips does not teach but Orensteen teaches but for a **critical angle of view, or a limited range of angles close to that critical angle, the layer is effectively transparent allowing unimpeded viewing of the marking**. Orensteen column 2 lines 40-54 teach an authenticating image with a restricted range of angles of view. It would be obvious to a person of ordinary skill in the art at the time of invention to obscure the marking at all angles but a few. The motivation would be as in Philips column 10 lines 14-18 to make the marking "substantially unnoticeable" to the human vision.

Claim 2 discloses a system according to **Claim 1** in which the marking is itself constituted by refractive index variations within the layer, such that for most angles of view, the graded refractive index layer presents the appearance of a uniform light-diffusing coating (Philips column 12 lines 1-27 "light diffusing screen incorporating graded refractive index features. Column 13 lines 43-65 teach a uniform layer light diffusing layer.).

Claim 3 discloses a system according to claim 1 or claim 2 wherein said layer of light transmitting material has been formed by exposing a photopolymerisable material to polymerising radiation (Philips column 9 lines 65-66 and column 10 lines 1-15).

Claim 5 discloses a product having a security or authentication marking, and wherein the product comprises a layer or coating of a graded refractive index material and in which the security or authentication marking is incorporated in the graded refractive index material itself, for example, by arranging that selected regions of the material are

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light-diffusing, and are substantially opaque at all angles of view, or are transparent from a different angle of view from the angle of view for which the remainder of the graded refractive index material becomes transparent, so that they become visible at the critical angle of view for which the remainder of the material becomes transparent (Philips column 9 lines 33-49 wherein the code markings are a pseudo-random array.).

Claim 7 discloses a method of providing a security marking on a product, comprising applying to the product a coating of a photopolymerisable material and causing said material to polymerise, by appropriate exposure to appropriate collimated radiation, (e.g. collimated ultraviolet light), at a predetermined angle, to establish refractive index variations within the layer, such that for most angles of view, the graded refractive index layer presents the appearance of a uniform light-diffusing coating, but for a critical angle of view, or a limited range of angles close to that critical angle, the layer is effectively transparent allowing unimpeded viewing of the marking (This claim is rejected the same as claims 1 and 4 above and combined with Philips column 7 lines 64-67 which teach collimated light and Philips column 15 lines 43-65 which teach ultraviolet light).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Philips et al. (US 6,674,875)** herein referred to as Philips and **Orenstein et al. (US 4,645,301)** herein referred to as Orenstein as applied to claim 5 above, and further in view of **Bjelkhagen (US 5,972,546)**.

Philips and Orenstein teach the limitations of claim 5 as above. They do not teach but Bjelkhagen teaches claim 6, a marking system according to ~~any preceding~~ claim 5 in which, instead of processing the material so that light pipes are created within the volume of the material, Lippmann layers are created using laser light so that the marking is composed of highly reflective coloured dots in column 3 lines 65-67 and column 4 lines 1-8. It would be obvious to one of ordinary skill in the art at the time of invention to use Lippmann layers in the pseudo-random spots in Philips column 9 lines 33-40. The motivation would be that Lippman layers add a great deal of security as taught in Bjelkhagen column 2 lines 9-50.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure..

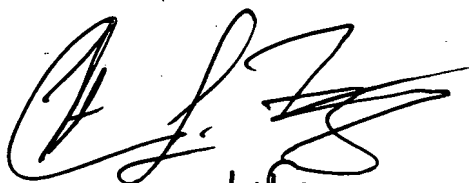
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole M. Young whose telephone number is 571-270-1382. The examiner can normally be reached on Monday through Friday, alt Fri off, 8:00am-5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NMY
7/18/2007



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